Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method for producing an SOI wafer by the hydrogen ion delamination method comprising at least a step of bonding a base wafer and a bond wafer having a micro bubble layer formed by gas ion implantation and a step of delaminating a wafer having an SOI layer at the micro bubble layer as a border, wherein, after the delamination step, the wafer having an SOI layer is ~~subjected to a two-stage heat treatment in~~subjected, in an atmosphere containing hydrogen or ~~argon~~ argon, to both a heat treatment utilizing a rapid heating/rapid cooling apparatus to improve the surface roughness of short periods of the SOI layer and a heat treatment utilizing a batch processing type ~~furnace.~~furnace to improve the surface roughness of long periods of the SOI layer.

2. (Original) The method for producing an SOI wafer according to Claim 1, wherein the two-stage heat treatment is performed by subjecting the wafers to a heat treatment in the rapid heating/rapid cooling apparatus and then a heat treatment in the batch processing type furnace.

3. (Original) A method for producing an SOI wafer by the hydrogen ion delamination method comprising at least a step of bonding a base wafer and a bond wafer having a micro bubble layer formed by gas ion implantation and a step of delaminating a wafer having an SOI layer at the micro bubble layer as a border, wherein an FZ wafer, an epitaxial wafer or a CZ wafer of which COPs at least on surface are reduced is used as the bond wafer, and the wafer having an SOI layer is subjected to a heat treatment under an atmosphere containing hydrogen or argon in a batch processing type furnace after the delamination step.

4-5. (Canceled)

6. (Withdrawn) An SOI wafer produced by the method according to Claim 1, which has an RMS value of 0.5 nm or less concerning surface roughness for both of 1 μm square and 10 μm square.

7. (Withdrawn) An SOI wafer produced by the method according to Claim 2, which has an RMS value of 0.5 nm or less concerning surface roughness for both of 1 μm square and 10 μm square.

8. (Withdrawn) An SOI wafer produced by the method according to Claim 3, which has an RMS value of 0.5 nm or less concerning surface roughness for both of 1 μm square and 10 μm square.

9. (Canceled)